wiping off the vaginal surface. The evidence furnished by these findings is so definite that the authors say they are able to make a positive diagnosis as to the presence or absence of gonorrheal infection in young children by means of direct inspection through the urethroscope, without resorting to smears or cultures. With regard to treatment, Rubin and Leopold are extremely pessimistic. The subjects of their investigations have been treated for three years with all the known therapeutic measures—irrigations, ointments, yeast, vaccines, sera—without any appreciable benefit. They suggest, therefore, the necessity of adopting in these cases a more active therapy, similar in a general way to that applied to the treatment of gonorrhea in adults, but consider that before beginning this the extent of the deep lesion should in every instance be accurately determined by the use of the urethroscope, the appropriate medication being carried out by means of the same instrument.

Unusual Duplication of the Genito-urinary Tract.—A most remarkable case of this condition, which in view of its extent of development must certainly be considered unique in medical literature, is reported by GEMMEL and PATERSON (*Jour. Obst. and Gyn. Brit. Emp.*, 913, xxiii, 25). The subject of the report, a healthy, married woman, aged thirty-two years, presents the following abnormalities: The anterior-superior spinous processes are 11 inches apart, and there is no symphysis pubis, a gap of 5$\frac{7}{8}$ inches existing between the pubic bones. The interval between the thighs forms a perineal space 4 inches in diameter; in this are two distinct vulvar orifices, side by side, about 3 inches apart, with a single anus behind the left vulva. The vulvæ are about normal in size and form, each with well developed labia majora and minora, a clitoris, urethral, and vaginal openings. The median labia majora on each side, however, are somewhat less prominent than the lateral. Each vagina easily admits two fingers; bimanual examination reveals the presence on each side of a well formed cervix and uterus, each of which can be freely moved independently of the other. A single ovary can be be felt at the outer side of each uterus. The urethræ appear normal; by catheterization 6 ounces of clear urine were obtained from the left urethra, 4 ounces of turbid urine, containing pus, from the right. By means of collargol injections through the urethræ, two distinct and separate bladders were demonstrated by the *x*-rays. Between and somewhat anterior to the two vulvæ is an area of skin, devoid of both hair and sweat glands. On palpation this area is found to correspond to a circular opening about 1$\frac{1}{2}$ inches in diameter in the abdominal fascia; through this the abdominal viscera can be felt immediately beneath the thin skin. Gemmel and Paterson consider that this area represents the umbilicus, nothing else suggestive of that structure being present. One of the most interesting features about the case is that in 1910 pregnancy occurred in the right uterus, and the patient gave birth to a living male child through the right vagina; in 1912 pregnancy occurred in the left uterus, a living female child being delivered through the birth canal of that side. Both children were somewhat under-sized, but appeared to be about full term. Gemmel and Paterson ascribe all the anomalies to one underlying cause—the absence of an allantois, and discuss the embryological features of the case at some length. Evidently there has been no median ventral diverticulum from the internal cloaca; the Müllerian ducts have remained separate, and have been drawn backward to the surface of the body, so that they have come to open separately on the surface of the cloaca before the time of differentiation of the external organs. Each Müllerian duct has then become separately differentiated into a vagina, uterus, and Fallopian tube. As a result of the lack of allantois, the pelvic girdle, although fully formed, has been arrested in development, and no symphysis pubis or mons veneris has been developed. No normal bladder has been produced, and the traction of the amnion, which must have enfolded the embryo and come in direct contact with the chorion and placenta, had favored separate connection of the Müllerian ducts with the external cloaca and the formation of bilateral bladders and urethræ out of the ventral portion of the internal cloaca. The umbilical orifice has remained patent, and a pseudoumbilicus has been formed by ligation of the body wall at the time of birth.

OPHTHALMOLOGY

UNDER THE CHARGE OF

EDWARD JACKSON, A.M., M.D.,

DENVER, COLORADO,

AND

T. B. SCHNEIDEMAN, A.M., M.D.,

PHILADELPHIA.

Fundus Changes in Leukemia.—HUDSON (*Royal London Ophthal. Hosp. Report*, September, 1911, p. 153) thus summarizes the present state of knowledge with regard to leukemia: Changes are met with in both lymphatic and myelogenous leukemia, and in both chronic and acute cases; they are, however, by no means constant, being found, according to Leber, in only one-third or one-quarter of all cases. Both eyes are almost always affected but not always in equal degree. The changes are in some cases limited to the appearance of scattered hemorrhages, while pre-retinal hemorrhage may also occur (Stock); in other cases, however, more characteristic features are present, consisting in a light yellowish hue of the whole eye ground; distension and tortuosity of the retinal vessels, affecting more especially the veins, which are of rose tint, while the blood stream in the arteries is abnormally pale; pallor and indistinctness of the optic disk, with a diffuse haze, involving the whole retina, and often more pronounced in the course of the main veins. The veins may be bordered by white bands, while hemorrhages are found scattered through the retina, together with white spots which, according to many authors, are more numerous in the periphery of the fundus, so that they may be invisible to ophthalmoscopic examination. Such spots are also met with in the macula; they are not infrequently surrounded by a red border, and